

LIS008797268B2

(12) United States Patent

Altman et al.

(10) Patent No.: US 8,797,268 B2

(45) **Date of Patent:** Aug. 5, 2014

(54) FOLDING MOBILE DEVICE

(75) Inventors: **Steven R. Altman**, La Jolla, CA (US); **Daniel R. Ervin**, Escondido, CA (US)

(73) Assignee: QUALCOMM Incorporated, San

Diego, CA (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 649 days.

(21) Appl. No.: 12/917,968

(22) Filed: Nov. 2, 2010

(65) **Prior Publication Data**

US 2011/0115713 A1 May 19, 2011

Related U.S. Application Data

- (60) Provisional application No. 61/262,253, filed on Nov. 18, 2009.
- (51) Int. Cl. G06F 3/02 (2006.01) G06F 1/16 (2006.01) H04M 1/02 (2006.01)
- (52) U.S. Cl.

USPC **345/169**; 345/156; 345/173

(58) Field of Classification Search

(56) References Cited

U.S. PATENT DOCUMENTS

		~		
1,484,093 A	2/1924	Soss		
6,081,207 A	6/2000	Batio		
6,088,220 A	7/2000	Katz		
6,256,017 B1	7/2001	Bullister		
6,327,482 B1*	12/2001	Miyashita 455/566		
6,466,202 B1*	10/2002	Suso et al 345/169		
6,643,124 B1*	11/2003	Wilk 361/679.04		
6,859,219 B1*	2/2005	Sall 345/1.1		
	(Con	tinued)		
(Continued)				

FOREIGN PATENT DOCUMENTS

EP	1916826 A1	4/2008
WO	20080094263 A1	8/2008
WO	2009013690 A2	1/2009
	OTHER PUBI	LICATIONS

"Think Outside Stowaway Universal Bluetooth keyboard—Keyboards—CNET Archive," http://reviews.cnet.com/keyboards/think-ouside-stowaway-universal/1707-3134_7-3112 (Oct. 22, 2010).

(Continued)

Primary Examiner — Christopher E Leiby (74) Attorney, Agent, or Firm — Nicholas A. Cole

(57) ABSTRACT

A method and apparatus for a folding wireless device is disclosed. The wireless device may have a first housing and a second housing. Each housing may have a keyboard and a display. The housings may be connected by a hinge assembly which is operable to position the wireless device in an open or a closed configuration. Each display may be connected to each respective housing by a display support assembly operable to position the displays in a retracted position or an extended position. The display support assemblies may be further operable to tilt the displays toward a longitudinal axis formed by the housings, which may be in the open configuration.

58 Claims, 30 Drawing Sheets

